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ABSTRACT

Presented is the project termination report of the Coshocton, Ohio, 2 year program of individualized study for 56 academically talented high school students. Major objectives of the program are said to have been the improvement of student abilities in independent study, critical thinking, and conceptual understanding. Students are reported to have been chosen on the basis of interest and talent for the program which allowed them to spend a period a day in independent study of topics of their choice. Group meetings, conferences with advisors, and out of school research are also given to be program components. Evaluation is reported to have been by the collection and analysis of biographical, educational, and pretest data for both program participants and matched controls, as well as by the analysis of data from advisor, teacher, and student rating scales; the Watson-Glaser Appraisal of Critical Thinking; and the student grade point average. The acquisition of skills and attitudes necessary for independent study is reported to have been strongly supported by the data, though the attainment of the critical thinking and the conceptual understanding objectives were not supported by the data. It is recommended that the program be continued, and that faculty advisors be given more guidance in supervising the students in independent study. (DB)

INDIVIDUALIZED STUDY

FOR

ACADEMICALLY TALENTED STUDENTS

PROJECT TERMINATION REPORT
TITLE III ESEA
COSHOCTON PUBLIC SCHOOLS
COSHOCTON, OHIO

July 31, 1972

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SUMMARY

Coshocton High School's project INDIVIDUALIZED STUDY FOR THE ACADEMICALLY TALENTED had three main objectives for the years 1970-72: (1) To increase the talented student's ability in independent study, (2) To increase the talented student's ability in critical thinking, (3) To increase the talented student's ability in conceptual understanding. It was believed strongly that this type of student needed additional opportunities other than the regular classroom to develop his abilities in these areas.

The program operated in a stable community. The people are generally conservative and slow to accept changes that develop rapidly, although some changes that are developed in other areas may be adapted without causing too much concern among the populace. Overall, Coshocton High School is of the traditional type, operating a program for grades nine through twelve with an enrollment of 1,000 students.

Talented students were selected by faculty committee from volunteers who desired to pursue a study of their own particular interest in any field or area. The main criteria were student interest and talent.

Faculty advisors were chosen by the students in conference with the project director. The role of the advisor was to assist the student in organization and research. Students were not pressured nor expected to accomplish any set or prescribed amount of work. They set their own goals and at the end of the study critically evaluated themselves in terms of the goals.

Two inservice seminars were held to train the faculty and advisors in the goals of the program and in the methods of assisting students to study on their own. Specialists from universities and industry were contracted to assist in this phase.

The evaluation of the Individualized Study for the Academically Talented Students project at Coshocton High School was conducted over a two year period from August 1970 to June 1972. A total of 56 participants and 116 non-participants were included in the evaluation sample. The non-participants were matched with the participants in order to obtain a control group.

Biographical, educational and pre-test data were collected and the two groups analyzed for initial differences. Adjustments for these differences were made statistically by analysis of covariance.

The dependent variable measures were obtained from advisor,

teacher and student voting scales. Additional dependent variable measures were obtained from the Watson-Glaser Appraisal of Critical Thinking and from the student grade point averages.

The fifteen program objectives were considered separately, and the evidence summarized. The evidence strongly supported the acquisition of the skills and attitudes necessary for independent study by the participants. The strongest evidence came from the student self-evaluation

The attainment of the critical thinking objectives and conceptual understanding objectives was not supported by the data.

Scheduling of Individualized Study

Students enrolled in the INDIVIDUALIZED STUDY FOR ACADEMICALLY TALENTED STUDENTS program were excused from the regular schedule one period each day to pursue the study of their individually-chosen topics. The school year was divided into four nine-week quarters. Students pursued their studies for any or all of the nine-weeks quarters. It is entirely possible that some students could have continued an in-depth study of their topics for the entire four years of their high school career.

The students attended group meetings, conferred with their advisors, or worked at their special studies in any part of the school building necessary. When necessary, the students left the grounds to confer with resource personnel or to gather material and information for their studies. Some of the work for both the students and their advisors required after-school time.

Students made use of both the Coshocton Public and Coshocton High Libraries, science laboratories, woodworking and small engine shops, art room, electronics room, music rooms and many other conference rooms in the building. Each student produced a project such as: a physical project or model, research paper, scientific report of an experiment, poems, plays, music composition, or paintings.

Credit and Grades

Students could, by petition, study an academic subject individually in lieu of regular class work. When credit was granted in such a case, the student earned "A" grade for one unit for the year.

Other students in Individualized Study activities were granted an "H" (Honors) grade for the work undertaken. Such students had the option of petitioning the instructor-advisor and the committee to substitute "A" for credit in place of the "H". Such "A" credit was calculated as part of the point-ratio for determining class rank. Such credit was in excess of that required for graduation from Coshocton High School.

"H" grade is shown on the official transcript of credits, but not at any time used in determination of point ratio or class rank. No grade other than the "A" or "H" was used for INDIVIDUALIZED STUDY FOR THE ACADEMICALLY TALENTED. Students who enrolled but failed to make any progress within a nine-week period were dropped from the program and no mention is made on the school records.

During the two years of operation a total of 56 students participated in the program with a total of 213 quarters. Comments from faculty advisors, students and parents, and the results from the measurement instruments justify recommendation that the program should be incorporated within the school curriculum.

CONTEXT DESCRIPTION

Coshocton, a city of 13,800 with a total public and parochial student population of 3,570, is situated in the fringe area of Appalachia. Coshocton lacks some of the stimulus of contact with centers of dissemination of educational changes. The city is the county seat of Coshocton County, which is primarily a rural area. Coshocton would be categorized as "other urban" by the census bureau and the Department of Health, Education and Welfare. Geographically, Coshocton is located in South-eastern Ohio in the foothills of the Appalachian Mountains. It is surrounded by strip-mining regions and general agriculture. The city contains many diversified industrial plants such as paper, metal, plastics, and advertising novelties which have provided a rather stable economy over the years.

Most of the inhabitants of Coshocton have lived here since birth. In 1960, only 1.4 percent of the population were foreign born. The people are rather homogeneous in nationality, finance, and culture. There has been a slow but steady increase in population over the years. For example: The population in 1950 was 11,675, in 1960 13,106, and in 1970 it was approximately 13,800.

Four private church-related colleges operate within forty miles of Coshocton. They are: Wooster College at Wooster, Ohio; Kenyon College at Gambier, Ohio; Denison University at Granville, Ohio; and Muskingum College at New Concord, Ohio. Also one branch of Kent State University is operated for this area at New Philadelphia, Ohio. Muskingum College provides extension classes, mainly education courses for teachers, at Coshocton. Unfortunately, no general cultural interests are shared locally with any of these institutions.

The Coshocton Public Library serves the city and surrounding area. The facility, a Carnegie Library, houses approximately 80,000 volumes. It cooperates with other libraries in the area as well as the state library to provide books and other printed materials not available locally. The library has membership in a film exchange which has headquarters in Akron, Ohio. Thus it is able to serve the community more completely this way.

A small museum, the Johnson-Humrickhouse Museum, is located in the district. Principal collections include Early American artifacts, Indian artifacts, various other archaeological collections, and a very fine collection of oriental artifacts which includes woven fabrics, porcelains, and ceramics, carvings in jade, ivory and wood, and sculpture in both stone and metal.

One newspaper serves the area. This daily, The Coshocton Tribune, has a circulation of approximately 10,000. An AM-FM radio station broadcasts to the area. A community cable system brings telecasts from Cleveland, Ohio; Columbus, Ohio; Zanesville, Ohio;

Akron, Ohio, Steubenville, Ohio, and from Wheeling, West Virginia, to subscribers in the city.

The Coshocton City School District consists of five elementary schools which house grades kindergarten through four, one middle school which houses grades five through eight, and one senior high school which houses grades nine through twelve. One parochial school operates in the district and serves grades one through eight. The high school students from this parochial school attend Coshocton High School.

The student population is slightly more than 3,000 in grades kindergarten through twelve. The Coshocton High School consists of approximately 1,000 students. There has been a slow but gradual increase in the number of students over the past years. This is shown by a student enrollment of 2,790 in 1962 and an enrollment of 3,000 in 1972. The Coshocton City District operates on 25.80 mills applied to a tax base of 53,000,000.

The per pupil expenditure in the term 1970-71 was $640.99, compared to a state-wide average of $781.46. The community is generally conservative and the acceptance of new educational programs comes slowly.

When ESEA Title III funds became available, the director of curriculum, Mr. Ronald Cramblett, recognized a definite need for an enriched program for the academically talented students in Coshocton High School. Application was made and approved for planning funds. A committee of selected members of the high school faculty was appointed by Mr. Cramblett to study the possibilities in this area.

The faculty committee believed that the academically talented students were capable of much learning through Individualized Study. The program designed was to train students in the use of systematic methods of inquiry and problem solving. The major emphasis of the opportunity for these students was to pursue research projects of their own choosing in an atmosphere of free inquiry. The utilization of all available resources: the shop, the library, the museum, the arts media, available specialists in industry, and other-school and community resources was expected.

Education in a democracy must give every student equal opportunity to develop his own peculiar talents. Therefore, as much attention, encouragement, and financial support must be given to the academically talented as to slow learners or others involved in special education programs.

Full realization of the unique personality, talent, and interest of each individual is the highest aim of a democracy. To make this aim real for the academically talented student was the purpose of this program.

The interests of the academically talented students vary widely. Many of these students feel a need to study a particular topic or in an area that is not offered as a course or part of a course in the regular curriculum. The Individualized Study Program provided the opportunity for students to satisfy these needs.

PROGRAM DESCRIPTION

Any student who desired to enter the Individualized Study Program first requested an application from the Director. (A copy is enclosed in appendix A.) He completed the form, secured his parents' approval and returned the application to the Director of Individualized Study. As part of the application, the student was required to set forth in reasonable detail the proposal for his study. The application was then screened by a faculty committee.

Student selection criteria included:

1. Grades 9, 10, 11 and 12
2. I.Q. of 110 or higher
3. High rank in class
4. Reading proficiency
5. Teacher recommendation
6. Proficiency in a single subject or talent in a single field, such as music, painting, sculpture, woodworking
7. High student interest
8. Generally good character
9. Evaluation of student load in school and out
10. Satisfactory completion of application

It was not necessary for a student to meet all or any combination of the above criteria. They were merely used as a basis for the screening committee in selection of participants.

Specified Objectives

I. To increase the talented student's ability in Independent Study

- A. The student improves in his ability to state a problem succinctly.
- B. The student improves in his ability to research a problem by such means as the library, resource personnel, and experimentation
- C. The student improves in his ability to outline his procedure in detail with date lines for completion.
- D. The student improves in his ability to follow through and to revise his procedure as needed.
- E. The student improves in his ability to report accurately and logically the results of his study.

II. To increase the talented student's ability in critical thinking

- A. The student improves his skill to make comparisons of his selected readings, authors, and previous research results.
- B. The student improves his skill to identify common elements among data pertinent to his study.

C. The student improves his skill to make generalizations from data obtained from his study.
D. The student improves his skill to express opinions based on accurate information.
E. The student demonstrates significant (5% level) improvement on a selected standardized critical thinking test.
F. The student improves his skill to identify additional data needed to better describe a concept of his study.
G. The student improves his skill to withhold judgment until he has necessary data that describes a concept of his study.
H. The student improves his ability to identify unwarranted interpretations of his data that would not describe a concept of his study.

III. To increase the talented student's ability in conceptual understanding

A. The student improves his ability to understand the concepts of classroom subjects.
B. The student demonstrates significant (5% level) improvement on a selected standardized conceptual understanding test by 5% per year.

One of the greatest problems facing educators today, as it has been for many years past, is providing opportunities for individaulized instruction and learning opportunities for senior high school students. INDIVIDUALIZED STUDY FOR THE ACADEMICALLY TALENTED STUDENTS at Coshocton High School, while certainly not unique in all aspects, contains new ideas in the field which are innovative at this stage.

This program attempts to meet this problem and solve the need by giving talented students the opportunity to pursue independently areas of special interest on school time within the framework of the regular school day. Students are involved in Individualized Study under the encouragement and systematic guidance of a regular staff member assigned on the basis of competence in a given discipline.

The program identifies and challenges hidden talents whether they are obscured by poverty, affluence or any other condition. Many times in the past the talented students in a community have not realized their fullest potential because of the lack of stimuli, encouragement, and resources necessary for personal growth. This program, through early identification and subsequent enrichment, sought to develop this potential.

Scheduling of Individualized Study

Students enrolled in the INDIVIDUALIZED STUDY FOR ACADEMICALLY TALENTED STUDENTS program were excused from the regular schedule one period each day to pursue the study of their individually-chosen topics. The school year is divided into four nine-week quarters. Students pursued their studies for any one or all of the nine-weeks

quarters. It is possible that some students might continue an in-depth study of their topics for the entire four years of their high school career.

The students attended group meetings, conferred with their advisors, or worked at their special studies in any part of the school building necessary. When necessary, the students left the school grounds to confer with resource personnel or to gather material and information for their studies. Some of the work for both the students and their advisors required after school time.

Students made use of both the Coshocton Public and Coshocton High Libraries, science laboratories, woodworking and small engine shops, art room, electronics room, music rooms, and many other conference rooms in the building. Each student produced a project such as: a physical project or model, research paper, scientific report of an experiment, poems, plays, music composition, or paintings.

Student Group Activities

Seminars for participating students were held once in each two-weeks period to discuss and share methods of inquiry which carry the students into many areas of study to find solutions to problems. An adjunct to this aspect of the program was student involvement in community activities, attendance at cultural and industrial centers, and exposure to community influences in business. Local resources used were: banks, paper manufacturing plants, General Electric Laminated Plant, Soil Conservation Station, lawyers, and the Hopewell School for the Handicapped. College professors and local professionals were invited to speak to the participants on timely topics. Topics were selected to cover many fields of study such as: music, art, science, social studies, world problems, and journalism.

Field trips were scheduled to places of cultural and governmental interests. Such trips included the Cleveland Museum of Art, a session of the House of Representatives at Columbus, Ohio, and an ecological seminar at Muskingum College, New Concord, Ohio.

Materials needed for student projects were purchased by funds provided. Many resource materials such as books, pamphlets, and records for music and the languages were also purchased for student use.

Examination for Credit Information

On the suggestion of the advisor and with the approval of the project director, oral examinations were used in the Individualized Study program in place of the conventional written examination. The purpose of this phase of the program was to develop and maintain the highest standards of scholarship or workmanship. Through the process

of oral open examinations students gained experience in explaining their study while faculty examiners acquired insight into student learning and motivation.

Arrangements for the Examination

The time for examinations for students in Individualized Study was very flexible. They were held near the end of each semester of the school term or at the end of a quarter of study whichever was more convenient to the individuals concerned.

Other guidelines for the examinations are:

1. Individualized Study advisors are to handle arrangements for the examinations of students under their supervision.
2. Interested teachers and students are invited to attend and participate in oral examinations.
3. The length of the examination may vary from one to two hours.
4. The Individualized Study advisor is the chairman of the examining committee and has the responsibility for determining the criteria for conducting the examination.
5. The examination should open with a fifteen minute presentation on the part of the student, following which he submits to questioning by the examining committee. The committee may also entertain questions from the faculty and student audience.
6. Students must perform with distinction on the examination in order to obtain the "A" grade and credit.

INDIVIDUALIZED STUDY FOR THE ACADEMICALLY TALENTED also aimed to cultivate and nurture the ability of the individual who possessed a single talent in a given field as well as the abilities of the many-talented individual. Through the development of this single talent, the program, hopefully, motivated the sometimes-neglected student to improve his overall abilities and thus enable him to make a meaningful contribution to society.

The program trained the students to employ proper techniques of study and methods of research which he may profitably use to continue his education throughout life. Lack of such techniques and methods has often resulted in educational stagnation throughout life. Individualized Study inspires the student to discover the excitement of learning for one's self.

Personnel

The director of INDIVIDUALIZED STUDY FOR THE ACADEMICALLY TALENTED STUDENTS was appointed from the regular staff. His duties were: engage consultants, provide liason with the community and other outside interests, supervise the evaluation of the program,

interpret and disseminate the results, schedule the seminar sessions, and aid in the arrangements for examinations. Qualifications for the director were experience in the secondary field as a teacher or administrator and a Master's degree in education or in a special field.

Faculty advisors for the students were selected from the existing staff. Teachers selected for advisors were fully qualified to teach in the area in which they acted as an advisor. A minimum of two years teaching experience was required. A faculty advisor must hold a Bachelor's degree or higher. Faculty advisors were contracted on a part-time basis and reimbursed at an hourly rate ($5.00) for the time they served beyond regular school hours.

Students met their advisors once a week or as needed. Most students met more often during the first two or three weeks to get properly organized and have their study outline approved. Less frequent meetings were held after the student had made sufficient progress to understand thoroughly how he may proceed with his study. Advisor-student meetings were held at any convenient time and place, either in the school building or beyond.

Two consultants aided in the establishment and implementation of the program. They were qualified in the area for which they were employed. Each held the PH.D. degree.

Dr. Herbert L. Coon, Professor of Science Education of the faculty of The Ohio State University was contracted as consultant for the total program of INDIVIDUALIZED STUDY FOR THE ACADEMICALLY TALENTED STUDENTS. Dr. Coon gave much valuable assistance in planning and implementing the program.

Dr. Arthur L. White, Specialist in Evaluation, of the Science Education Faculty at The Ohio State University was contracted to draw up the evaluation design of the Individualized Study program. Dr. White assisted the Coshocton High School Individualized Study Committee in the preparation of evaluation instruments that could be used with a computor in processing the data, and in interpreting the results.

An inservice training program was held during the week preceding the opening of the school year. Discussion seminars with university consultants were held to train the faculty of Coshocton High School and more specifically those members who would be advisors to participating students. Also seminars were held periodically throughout the year. The aim of these seminars was to train the faculty advisors in the methods of working with students who were academically talented and who would be largely working on their own initiative. It was not the duty of the advisor to teach these students, but rather to suggest and guide when necessary. Each student was to be free to fail or to succeed without typical faculty pressure. It was felt by the planning committee that many students would learn much through unpressured failures as well as through their successes.

Special Facilities, Equipment, and Materials

This program operated in the existing Coshocton High School building and program. Funds were provided for student material and resource materials which enabled them to explore deeply into their selected area of study.

All equipment, office machines and space were provided by the Coshocton City Board of Education. The Board of Education also paid the Director's salary for one year during the implementation of the program.

DISSEMINATION

Program dissemination was accomplished through the state department of education, following procedures established by that agency.

Public dissemination was chiefly through the use of the local newspaper and community cable television. Considerable interest in the program has been generated through the local news media, through stories developed by both the school officials and the news-gathering and disseminating personnel. This has been accomplished through newspaper stories with responsible school agency personnel. The presentation of fifteen to thirty minute television programs originated in the Coshocton High School television studio and was broadcast on the local channel which serves all the territory served by the school district.

There have been three voluntary requests for information concerning the program of INDIVIDUALIZED STUDY FOR THE ACADEMICALLY TALENTED.

1. Dobyns-Bennett High School
   Kingsport, Tennessee

2. Miami Trace Local School District
   Washington Courthouse, Ohio

3. Ann Goeke
   University of Dayton

These three schools were each sent one copy of the final approved program.

There have been numerous releases which concerned participating students in the local newspaper, The Coshocton Tribune. The high school paper also has given coverage.

The director and a student spoke before the local service clubs, Rotary and Kiwanis, to explain the possibilities offered through Individualized Study. An evening meeting was held for students, advisors, and parents to distribute information, and to discuss and answer questions.

One pamphlet has been prepared to explain procedure for enrollment and participating activities. These pamphlets were distributed throughout the school. The pamphlets were also distributed at the Regional Dissemination meeting held in Columbus, Ohio, March 15, 1971.

This program has been explained in the school system by the guidance counselors at registration time. It is explained in the school schedule planner. The director has spoken before each English class to explain the ideas and procedure for enrollment. Thus each student in school has had the opportunity to ask questions.

Budget

The total cost of the program (1970-71) was $33,087.00. Of this total $10,555.00 was paid by the Coshocton City Board of Education, and $22,532.00 was provided by Title III, ESEA of the U. S. Office of Education.

The total cost of the evaluation which is included in the above expenditures was $1,400.00.

ERIC RESUME

Initiated in 1970, the program of INDIVIDUALIZED STUDY FOR THE ACADEMICALLY TALENTED at Coshocton High School for grades nine through twelve was designed to give this type of student the opportunity to plan, follow through, and evaluate a study of his own interest with minimum assistance from the teacher-advisor. This program made use of community, university, and school resources. It was incorporated within the regular school day and was pursued by the students either with or without school grades and credit.

The objectives were to improve the ability of the students in independent study, critical thinking, and conceptual understanding. All personnel were selected from the regular faculty with the exceptions of the program and evaluation consultants and seminar speakers.

A control group was established by matching the participants with non-participants on the basis of sex, class and class rank. Biographical data and educational background information were collected on participants and non-participants. The initial differences between these two groups was assessed and covariates were identified.

The analysis of the post-measures was carried out to determine which of the fifteen program objectives were met.

The fifteen program objectives were considered separately and the evidence summarized. The evidence strongly supported the acquisition of the skills and attitudes necessary for independent study by the participants. The strongest evidence came from student self-evaluation.

The attainment of the critical thinking objectives and conceptual understanding objectives were not supported by the data.

EVALUATION OF ACTIVITIES AND OUTCOMES

The evaluation of the INDIVIDUALIZED STUDY FOR THE ACADEMICALLY TALENTED STUDENTS project at Coshocton High School in Coshocton, Ohio was designed and initiated in the fall of 1970. The collection and analysis of information extended from September, 1970, through May, 1972.

The design of the evaluation, development of instruments and collection of data was a joint endeavor involving the faculty, advisors, the regular classroom teachers, the project director and the consultant personnel.

Data Gathering Instruments and Activities

Biographical information and educational background data were collected from the school records on the incoming participants and a group of non-participants. The non-participant group was selected by matching two non-participants with each participant on the basis of sex, class and class rank. The information obtained from the existing records served both as a description of the two groups, and as baseline data for determination of changes over time. The variables represented by these data are listed in Tables 1 and 4.

Information was also collected from the participants, non-participants, advisors, classroom teachers and parents for the evaluation of the Individualized Study program; this information was obtained by means of five rating scales and a letter. The letter was sent to parents of the participants after the program was terminated to obtain their comments concerning the value of the program.

The rating scales were:

Advisor Evaluation (AE-1)
Classroom Teacher Evaluation (CTE-1)
Student Evaluation (SE-1)
Student Evaluation (SE-2)
Post High School Evaluation (PHSE-1)

The rating scales were used as pre and post measures except for the SE-2 and PHSE-1 scales. These were post test measures only. These instruments were used to collect information concerning the participants and the non-participants with the exception of the AE-1, SE-2 and PHSE-1 which were relevant to the participants only.

The five rating scales are described in the following paragraphs.

AE-1

The AE-1 instrument was designed to collect information from the faculty members serving as advisors for the students in the project. Ten items were included and the advisors were asked to rate the

student on a scale from 1 to 5 concerning his effectiveness in individualized study and problem solving. Two subscales of this instrument were identified. Subscale 1 was the advisor's estimate of the student's individualized study skills. Skills Subscale - items 1, 2, 3, 4 and 10 and Subscale 2 was the advisor's estimate of the student's attitude toward individualized study (Attitude Subscale - items 5, 6, 7, 8 and 9).

This instrument was completed by the faculty advisor as pre and post-measures each year and as a mid-year measure during the 1971-72 school year.

CTE-1

The CTE-1 instrument was designed to collect information from each teacher who had the participants and the non-participants in class during the school year. This instrument was used to collect the teacher's ratings of the student's social awareness, attitudes toward school, study habits and conceptual understanding relative to that specific course. Ten items were included on this instrument and it was also scored as two subscales and a total score. The subscales were measures of independent study skills. (Skills Subscale - items 3, 5, 6, 7, 8 and 9) and attitude toward independent study (Attitude Subscale - items 1, 2, 4 and 10). This instrument was completed as a pre- and post-measure by three to six teachers for each member of the participant and non-participant groups, depending on the number of courses the student was taking. During the 1970-72 school year, a mid-year measure was also collected from the teacher.

SE-1

The SE-1 instrument was designed to obtain the student's self-evaluation of his individualized study skills and attitudes. Each participant and non-participant rated himself on ten items dealing with attitudes and skills related to individualized study. This instrument was used to obtain two subscale scores and a total score. The subscales were (1) a measure of the student's estimate of his possession of the necessary skills for individualized study (Skills Subscale - items 1, 2, 6, 7 and 9), and (2) the student's estimate of his own attitudes relating to independent study (Attitude Subscale - items 3, 4, 5, 8 and 10). This instrument was given as a pre-test measure to all groups, a post-test measure to the 1971-72 participant and non-participant groups.

SE-2

The SE-2 instrument was designed to obtain information from the participants only concerning their assessment of the value of activities included in the program and the benefit they derived from participating in the project. This instrument consisted of ten items which were grouped to give two subscales and a total score. Subscale 1 is a measure of the student's assessment of the value of the activities and experiences (Outcome Subscale - items 1, 2, 4 and 9). Subscale 2 is the student's assessment of the frequency and length of the various activities (Transaction Subscale - items 3, 5, 6, 7, 8 and 10). This information was collected at the end of each school year.

PHSE-1

The Post High School Evaluation was designed to obtain information from the participants concerning the benefits they felt were derived from participation in the program. This information was obtained only from the first year participants who graduated in June, 1971. Their responses were obtained from six to eight months after their involvement in the program.

These instruments are included in appendix A.

The Watson-Glaser Critical Thinking Appraisal was administered as a pre-post measure of the students' abilities in the skills of critical thinking. The two different forms of the Watson-Glaser used were YM and ZM.

The participants and non-participants grade point averages for each six-weeks grading period and cumulative for each year were recorded. The schedule for the data collection activities is given in Table 1.

Table 1
Data Collection Schedule

	Bio-Graphic		AE-1		CTE-1		SE-1		SE-2		Watson-Glaser		PHSE-1	Parent Eval.	G.P.A.*	
	P[c]	NP	P	NP	P	NP	P	NP	P	NP	P	NP	P	P	P	NP
Sept. 1970	PRE[b]	PRE	PRE		PRE	PRE	PRE	PRE			PRE	PRE			PRE	PRE
[a]Nov. 1970	Pre	Pre	Pre		Pre	Pre	Pre	Pre			Pre	Pre				
[a]Feb. 1971	Pre	Pre	Pre		Pre	Pre	Pre	Pre			Pre	Pre				
[a]April 1971	Pre	Pre	Pre		Pre	Pre	Pre	Pre			Pre	Pre				
May 1971			POST		POST	POST	POST		POST		POST	POST	POST		POST	POST
Sept. 1971	PRE	PRE	PRE		PRE	PRE	PRE	PRE			PRE	PRE				
[a]Nov. 1971	Pre	Pre	Pre		Pre	Pre	Pre	Pre			Pre	Pre				
[a]Feb. 1972	Pre	Pre	MID Pre		MID Pre	MID Pre	MID Pre	MID Pre	MID		Pre	Pre				
[a]April 1972	Pre	Pre	Pre		Pre	Pre	Pre	Pre			Pre	Pre				
May 1972			POST		POST	POST	POST	POST	POST		POST	POST		POST	POST	POST

*Grade point averages were collected for every 6 weeks grading period and the cumulative GPA for each year.

aThe majority of the participants entered in September of each year. These pre-test measures are for the few starting after the first quarter of the year.

[b]The capital letters represent the major data collection activity.

[c]P = Participants NP = Non-participants

Data Treatment Procedures

The information collected for the evaluation was used to:

A. Describe the program participants.
B. To select a comparable group of students to use as a control group.
C. To identify the initial differences between the participants and the control group.
D. To measure the extent to which the project goals were met.

The data analysis design included four groupings of the participants and non-participants during the two years of the program. These groupings were:

A. 1970-71: These are the students who participated in the first year of the program. This included 31 participants and 62 students of a matched control group.

B. 1970-71-72: These are the students who participated in both the first and second year of the program. There were 11 participants and 18 control group students.

C. 1971-72: These are the students who participated only the second year of the program. There were 25 in this group and 54 in the matched control group.

D. 1970-72: This group includes all of the students who participated at any time regardless of when they started or how long they were involved. There were 56 in this group and 116 in the matched control group.

These four groups are not independent of one another since some of the participants fall in more than one category. Nevertheless, it is informative to look at these groupings.

The data for all background variables and pre-test conditions were subjected to a one-way analysis of variance comparing the participants with the non-participants for each of these groupings. The Clyde (MANOVA) computer program (1969) was used for this purpose. These results are given in Table 2.

The results of the pre-test analyses were used to identify what covariates should be used in the analysis of the mid- and post-test scores. The data from the CTE-1, SE-1, the Watson-Glaser and the grade point averages were analyzed using the appropriate covariates by a one-way analysis of covariance comparing the participants with the non-participants. The alpha level of 0.05 was selected as the significance level for this evaluation.

The Advisor Evaluation (AE-1) and the Student Evaluation (SE-2) were pre-post measures for the participants only. These data were

analyzed for significant changes using a correlated groups repeated measures analysis of variance.

Pre Test and Background Data Analysis Results

The results of the analysis of the pre-test and background data can be found in Tables 2 and 4. The table and the discussion of the results have been divided into four sections representing the 70-71, 70-71-72, 71-72 and 70-72 groups described previously.

1970-71

The participant and non-participants which were involved during the first year differed significantly at the 0.05 level on student background in I.Q., arts and physical education, SE-1 skills, SE-1 (total) and the CTE-1 (attitudes) scores.

The participants' I.Q. was 116.12 compared with 110.12 for the non-participants. The arts and physical education was 2.45 years per participant compared to 3.56 years per non-participant. The CTE-1 Attitude score for the participants was 16.19 compared to 15.2 for the non-participants. The participants also rated themselves higher on their independent study skills (18.51) and total (40.35) than did the non-participants. (Skills = 16.70, Total = 37.93)

The covariates selected for use in analysis of the post-test scores were I.Q., background in science, background in arts and physical education, CTE-1 total score and the Watson-Glaser Critical Thinking Appraisal total score. These variables were selected because of their correlation with other variables where the groups differed significantly and because they were the more reliable measures.

1970-71-72

The participants and non-participants who were in the project for two years differed significantly at the .05 level on two variables, their arts and physical education course background and item 10 of the Classroom Teacher Evaluation. This item was a rating of the students' participation in class discussions. The participants had a rating of 4.00 out of a possible 5.00, while the non-participants were rated 3.67.

The covariates selected for use in the post-test analyses for this group were arts and physical education background and the CTE-1 (total).

1971-72 (only)

The participants and non-participants who were in the project during the second year only differed significantly on CAT reading V, SE-1 (items 1, 2, 8), SE-1 Skills Subtest, SE-1 Attitudes Subtest, SE-1 Total, Watson-Glaser Inference subscale and the overall Watson-Glaser percentile score.

The participants were higher on all of these measures than were the non-participants. The variables selected as covariates for the post-test analyses for these groups were CAT Reading V, SE-1 Total and the Watson-Glaser overall percentile score.

1970-72

The participants and non-participants which were involved at any time during the project differed significantly at the .05 level from the non-participants except for the student background in arts and physical education.

The variables selected as covariates for this analysis were I.Q. student background in arts and physical education, CTE-1 Total, English teaching classroom teachers, SE-1 Total, Watson-Glaser Total and the CAT Reading Comprehension scores.

Table 2
Pre-test Statistics

Variable		70-71 P	70-71 NP	α	70-71-72 P	70-71-72 NP	α	71-72 P	71-72 NP	α	70-72 P	70-72 NP	α
Grade Level	M	11.03	11.03	.86	10.89	10.94	.65	11.35	11.38	.88	11.16	11.19	.86
	SD	.79	.78		.33	.24		.81	.77		.82	.79	
Sex (1=M, 2=F)	M	1.45	1.45	.81	1.56	1.59	.88	1.35	1.28	.55	1.41	1.38	.72
	SD	.50	.50		.53	.51		.49	.45		.50	.49	
Age	M	16.39	16.42	.85	16.26	16.39	.43	16.60	16.85	.28	16.46	16.61	.30
	SD	.84	.80		.37	.41		.83	.86		.83	.85	
Cum. G.P.A.	M	3.05	2.95	.32	3.27	3.01	.46	2.80	2.88	.72	3.00	2.94	.64
	SD	.82	.74		.84	.85		.75	.74		.77	.74	
Absence	M	5.38	5.43	.87	4.11	5.41	.53	8.75	7.15	.36	6.59	6.16	.67
	SD	3.93	5.83		2.71	5.82		7.22	6.30		5.52	6.05	
I. Q.	M	116.12	110.12	*.02	115.44	107.06	.20	113.70	111.94	.60	116.00	110.95	*.02
	SD	14.71	12.74		17.24	14.22		11.68	13.02		12.84	12.90	
CAT Read. V	M	75.99	74.04	.93	78.67	68.59	.39	78.20	61.34	*.01	76.90	68.67	.06
	SD	28.18	23.56		30.74	26.53		19.29	25.88		24.74	25.26	
CAT Read. C	M	77.99	68.88	.22	78.38	63.06	.26	75.47	67.81	.24	78.19	69.63	*.04
	SD	26.36	24.74		30.13	31.80		20.08	24.74		22.36	25.17	
CAT Math. R	M	75.27	76.76	.20	78.89	62.53	.18	67.30	68.89	.81	73.63	68.88	.28
	SD	30.95	23.14		28.06	28.76		25.29	24.83		26.21	24.74	
CAT Math. F	M	79.96	71.06	.55	74.50	64.35	.48	55.42	67.38	.12	67.12	68.08	.85
	SD	23.91	25.39		38.22	30.10		31.14	26.97		30.80	27.13	
CAT Lang. M	M	74.79	68.86	.58	76.22	72.88	.80	76.50	73.23	.59	75.78	75.24	.90
	SD	28.54	27.05		37.95	29.26		20.64	23.06		26.98	23.18	
CAT Lang. S	M	78.41	75.14	.65	75.62	70.59	.73	76.90	71.34	.41	77.81	73.55	.31
	SD	27.11	22.22		38.86	30.91		22.07	25.70		25.00	23.87	
Course Background in Science	M	2.32	2.12	.17	2.46	1.83	.06	1.95	2.06	.64	2.16	2.09	.67
	SD	.94	.94		.93	.79		1.00	.87		.99	.90	
Mathematics	M	2.29	2.35	.89	2.46	2.22	.44	2.10	2.13	.88	2.24	2.24	1.00
	SD	.69	.83		.82	.73		.79	.68		.72	.75	
English	M	3.09	3.09	.82	3.00	3.00	1.00	2.40	2.51	.56	2.82	2.84	.88
	SD	.87	.88		.44	.48		.68	.72		.88	.86	

Table 2 continued

Variable		70-71			70-71-72			71-72			70-72		
		P	NP		P	NP		P	NP		P	NP	
Language	M	2.09	1.80	.59	2.09	1.72	.46	1.70	1.40	.25	1.98	1.67	.12
	SD	1.32	1.21		1.30	1.27		.98	.95		1.20	1.11	
Social Studies	M	2.54	2.27	.58	2.27	2.22	.87	1.65	1.40	.32	2.14	1.89	.20
	SD	1.38	1.08		1.01	.65		1.09	.82		1.34	1.07	
Arts and P. E.	M	2.45	3.56	.01*	2.09	3.50	.01*	3.20	2.98	.55	2.78	3.30	.04*
	SD	1.72	1.42		1.72	1.30		1.40	1.39		1.65	1.44	
Business	M	.93	1.22	.54	1.00	1.11	.78	.70	.92	.43	.86	1.08	.29
	SD	1.03	1.39		1.26	.90		.80	1.08		.96	1.28	
Class. Teacher	M	4.29	4.15		4.38	3.94	.18	4.17	4.08	.57	4.26	4.12	.26
Eval., Item 1	SD	.73	.76		.48	.97		.60	.58		.68	.70	
Item 2	M	3.80	3.55		3.76	3.47	.17	3.83	3.79	.76	3.81	3.66	.08
	SD	.53	.49		.43	.57		.54	.45		.52	.49	
Item 3	M	3.99	3.98		4.23	3.77	.14	4.04	3.98	.74	3.98	3.98	.96
	SD	.77	.74		.51	.92		.65	.73		.73	.74	
Item 4	M	4.03	3.96		4.08	3.78	.13	4.03	3.97	.64	4.02	3.96	.51
	SD	.54	.46		.38	.58		.49	.52		.52	.51	
Item 5	M	3.86	3.61		3.97	3.55	.07	3.80	3.69	.47	3.81	3.65	.10
	SD	.53	.59		.48	.65		.57	.54		.53	.57	
Item 6	M	3.88	3.72		4.04	3.71	.16	3.85	3.76	.49	3.85	3.74	.24
	SD	.57	.57		.56	.64		.54	.51		.54	.55	
Item 7	M	3.83	3.84		3.97	3.68	.38	3.90	3.80	.59	3.88	3.83	.68
	SD	.73	.74		.57	1.00		.58	.73		.68	.74	
Item 8	M	3.62	3.56		3.82	3.41	.08	3.58	3.55	.85	3.59	3.57	.82
	SD	.62	.65		.49	.62		.54	.59		.59	.63	
Item 9	M	4.01	3.86		4.17	3.67	.06	3.98	3.89	.54	4.01	3.87	.20
	SD	.65	.61		.52	.76		.57	.53		.62	.58	
Item 10	M	4.05	3.54		4.00	3.47	.04*	3.79	3.67	.53	3.94	3.59	.003*
	SD	.51	.65		.58	.69		.68	.71		.59	.69	
CTE-1 - Skills	M	23.21	22.59	.46	24.21	21.80	.11	23.15	22.67	.58	23.12	22.64	.43
	SD	3.66	3.62		2.85	4.35		3.16	3.26		3.41	3.47	

Table 2 continued

Variable		70-71			70-71-72			71-72			70-72		
		P	NP	≮	P	NP	≮	P	NP	≮	P	NP	≮
CTE - Attitudes	M	16.19	15.21	.03*	16.21	14.66	.07	15.82	15.51	.56	16.025	15.33	.04*
	SD	1.93	1.99		1.53	2.46		2.05	1.94		1.97	1.99	
CTE - Total	M	39.40	37.80	.19	40.42	36.46	.09	38.97	38.18	.56	39.14	37.98	.20
	SD	5.44	5.38		4.18	6.64		5.17	5.08		5.26	5.27	
Classroom Teacher Area - Science	M	.51	.72	.19	.73	.36	.11	.80	.62	.20	.63	.67	.72
	SD	.56	.63		.70	.50		.52	.53		.57	.60	
Mathematics	M	.45	.52	.93	.47	.43	.84	.70	.64	.65	.55	.57	.87
	SD	.50	.50		.52	.51		.47	.53		.50	.52	
English	M	1.09	.95	.08	1.07	1.07	.98	1.10	1.06	.67	1.122	1.00	.05*
	SD	.39	.33		.46	.48		.31	.32		.39	.34	
Language	M	.70	.62	.56	.67	.71	.84	.35	.53	.18	.59	.58	.94
	SD	.64	.52		.72	.47		.49	.50		.61	.51	
Social Studies	M	1.25	.95	.06	1.13	1.21	.65	.90	1.00	.58	1.06	.97	.41
	SD	.68	.49		.52	.43		.72	.66		.72	.58	
Arts and P. E.	M	.58	.67	.99	.33	.64	.19	.50	.62	.56	.55	.64	.47
	SD	.76	.67		.49	.74		.89	.68		.82	.68	
Business	M	.45	.57	.54	.40	.36	.86	.40	.43	.88	.45	.51	.59
	SD	.62	.69		.63	.63		.60	.62		.61	.66	
Student Self Eval. - Item 1	M	3.62	3.26	.10	3.13	2.64	.13	3.84	3.00	.004*	3.71	3.15	.002*
	SD	1.13	.95		.92	.74		1.02	1.06		1.09	1.01	
Item 2	M	3.59	3.38	.41	3.53	3.14	.44	3.90	2.85	.001*	3.73	3.14	.005*
	SD	1.10	1.24		1.25	1.46		.94	1.18		1.05	1.23	
Item 3	M	4.44	4.44	.95	4.20	4.43	.52	4.58	4.43	.40	4.48	4.42	.67
	SD	.72	.72		1.08	.76		.69	.65		.71	.73	
Item 4	M	4.19	4.21	.89	4.13	4.21	.80	4.53	4.36	.43	4.33	4.27	.68
	SD	.69	.90		.83	.89		.61	.82		.69	.87	
Item 5	M	3.97	3.79	.41	3.80	4.07	.49	3.68	3.32	.10	3.90	3.57	.05*
	SD	.93	1.05		1.01	1.07		.88	.78		.93	.97	
Item 6	M	3.72	3.13	.01*	3.60	3.21	.38	3.68	3.57	.66	3.71	3.33	.04*
	SD	1.11	1.06		1.24	1.05		1.00	.85		1.07	1.00	

Table 2 continued

Variable		70-71			70-71-72			71-72			70-72		
		P	NP		P	NP		P	NP		P	NP	
Item 7	M	3.59	3.28	.13	3.47	3.00	.23	3.68	3.40	.32	3.60	3.31	.09
	SD	.84	1.00		.99	1.04		1.00	1.04		.92	1.01	
Item 8	M	4.72	4.18	.005*	4.60	4.21	.16	4.63	3.79	.001*	4.69	4.01	.001*
	SD	.52	.92		.63	.80		.60	.83		.55	.91	
Item 9	M	4.06	3.59	.01*	3.67	3.71	.89	4.00	3.53	.06	4.04	3.58	.002*
	SD	.80	.78		1.05	.83		.88	.90		.82	.84	
Item 10	M	4.56	4.49	.64	4.47	4.57	.69	4.79	4.40	.08	4.62	4.45	.18
	SD	.62	.72		.74	.65		.54	.88		.61	.79	
SE-1 - Skills	M	18.59	16.64	.001*	17.40	15.71	.10	19.10	16.36	.001*	18.79	16.51	.001*
	SD	2.18	2.44		2.29	2.95		2.58	2.88		2.36	2.64	
SE-1 - Attitudes	M	21.88	21.10	.12	21.20	21.50	.72	22.21	20.30	.01*	22.02	20.73	.002*
	SD	1.84	2.48		2.14	2.31		2.23	2.55		2.02	2.54	
SE-1 Total	M	40.47	37.74	.001*	38.60	37.21	.37	41.32	36.66	.001*	40.81	37.24	.001*
	SD	3.44	3.00		3.98	4.21		4.27	4.60		3.81	4.30	
Watson-Glaser	M	11.90	10.82	.07	10.50	9.82	.61	9.79	8.13	.04*	11.23	9.61	.004*
Inference	SD	3.50	2.69		4.28	2.39		2.88	2.96		3.40	3.10	
Assumptions	M	10.35	10.22	.74	8.25	9.82	.37	11.47	10.81	.34	10.77	10.50	.64
	SD	4.23	3.48		4.71	3.63		2.27	2.64		3.61	3.14	
Deduction	M	17.96	17.14	.22	16.75	15.65	.60	16.95	15.57	.11	17.67	16.46	.06
	SD	4.40	3.56		6.82	3.53		3.32	3.10		4.05	3.49	
Interpretation	M	18.54	16.91	.09	18.00	16.29	.31	16.26	15.02	.17	17.58	16.11	.02*
	SD	3.05	3.71		3.12	4.07		3.41	3.22		3.36	3.58	
Argument	M	10.16	9.35	.11	10.00	9.24	.48	10.16	9.81	.53	10.19	9.57	.10
	SD	2.63	2.18		2.00	2.70		1.50	2.19		2.18	2.20	
Total	M	68.99	64.46	.08	63.50	60.82	.64	64.63	59.34	.06	67.44	62.26	.01*
	SD	12.88	11.49		14.63	12.17		10.32	9.82		12.01	11.06	
Percentile	M	64.22	54.93	.14	51.00	46.47	.75	66.26	51.00	.04*	65.50	53.43	.02*
	SD	30.31	29.70		34.95	30.97		26.60	37.30		28.18	28.45	

*Indicates significant difference

Post-test Analysis Results

The post-test scores for each of the four groupings of participants were compared for significant difference. The data were analyzed using the analysis of covariance and the covariates as identified from the pre-test and background variable differences. Table 3 includes the dependent variable names, the alpha levels ( ), the adjusted means (M) and standard deviations (SD) for the participants (P) and non-participants (NP) for each grouping. (70-71, 70-71-72, 71-72 and 70-72)

The AE-1, SE-2 and PHSE-1 ratings were only obtained for the participants, so no control group comparison could be made. The AE-1 was a pre-post measure, so an analysis of the gains was done. Table 4 gives the variable names, means, standard deviations, alpha level and pre or post designations for each of the groupings. The data from the SE-2 ratings can be found in this table.

The data for the PHSE-1 ratings consists of the mean rating for all of the first year participants on each of the ten items. These results are in Table 5.

The order of the discussion of the results will be in terms of these groupings and then across these groupings for each of the fifteen program objectives. This will help to identify the differences as the program and participants varied and it will provide trend information in relation to the success or failure of the project.

1970-71

The analysis of the post-test data for the first year individuals revealed significant differences between the participants and non-participants on the CTE-1 (Items 2, 5, 8 and 10) at the 0.05 level. These differences all favored the participants and dealt with social awareness, potential for creative thinking, ability to display knowledge beyond the classroom resources and class discussion participation. No significant differences were found in grade point averages or Watson-Glaser scores.

Table 3
Post-test Analysis Statistics

Variable		70-71			70-71-72			71-72			70-72		
		P	NP		P	NP		P	NP		P	NP	
Classroom Teacher Eval. - Item 1	M	3.95	4.09	.18	3.78	4.22	.16	3.83	4.04	.28	4.01	4.02	.97
	SD	.44	.44		.65	.65		.62	.62		.48	.48	
Item 2	M	3.91	3.56	.001*	3.78	3.88	.64	3.61	3.89	.02*	3.86	3.78	.33
	SD	.36	.36		.45	.45		.37	.37		.38	.38	
Item 3	M	3.64	3.75	.46	3.50	4.06	.16	3.48	3.82	.13	3.66	3.78	.39
	SD	.58	.58		.84	.84		.75	.75		.63	.63	
Item 4	M	3.76	3.94	.06	3.78	4.12	.17	3.83	4.09	.10	3.88	3.98	.32
	SD	.40	.40		.52	.52		.52	.52		.46	.46	
Item 5	M	3.76	3.52	.02*	3.64	3.71	.79	3.54	3.75	.16	3.71	3.68	.76
	SD	.42	.42		.58	.58		.50	.50		.48	.48	
Item 6	M	3.77	3.58	.06	3.59	3.78	.50	3.51	3.79	.09	3.73	3.71	.87
	SD	.41	.41		.57	.57		.54	.54		.48	.48	
Item 7	M	3.61	3.72	.41	3.42	3.97	.15	3.42	3.73	.17	3.65	3.67	.85
	SD	.56	.56		.78	.78		.74	.72		.59	.59	
Item 8	M	3.69	3.44	.01*	3.54	3.59	.84	3.49	3.61	.42	3.68	3.52	.09
	SD	.37	.37		.61	.61		.48	.48		.42	.42	
Item 9	M	3.91	3.84	.53	3.93	3.98	.85	3.67	3.85	.28	3.92	3.81	.25
	SD	.45	.45		.62	.62		.55	.55		.46	.46	
Item 10	M	3.93	3.40	.001*	3.51	3.82	.32	3.43	3.83	.02*	3.78	3.70	.52
	SD	.54	.54		.65	.65		.57	.57		.57	.57	
Skills	M	22.39	21.86	.36	21.62	23.09	.39	.11	22.56	.14	22.35	22.17	.76
	SD	2.42	2.42		3.62	3.62		.16	3.16		2.65	2.65	
Attitudes	M	15.54	15.00	.08	14.84	16.04	.19	14.70	15.85	.03*	15.53	15.47	.86
	SD	1.29	1.29		1.93	1.93		1.67	1.67		1.44	1.44	
Total	M	37.93	36.86	.20	36.46	39.13	.30	35.81	38.42	.07	37.88	37.64	.79
	SD	3.51	3.51		5.48	5.48		4.71	4.71		3.91	3.91	
Student Evaluation (SE-1) - Item 1	M	3.62	3.26	.10	3.84	2.99	.04*	3.86	3.00	.01*	3.88	3.01	.001*
	SD	1.13	.95		.86	.86		1.06	1.06		1.01	1.01	
Item 2	M	3.59	3.38	.41	4.54	2.94	.001*	3.56	3.26	.35	3.39	3.30	.72
	SD	1.10	1.24		.78	.78		1.05	1.05		1.01	1.01	

Table 3 continued

Variable		70-71 P	70-71 NP	70-71 α	70-71-72 P	70-71-72 NP	70-71-72 α	71-72 P	71-72 NP	71-72 α	70-72 P	70-72 NP	70-72 α
Item 3	M	4.44	4.43	.95	4.58	4.45	.62	4.64	4.31	.12	4.66	4.32	.02*
	SD	.72	.78		.59	.59		.68	.68		.63	.63	
Item 4	M	4.19	4.21	.89	4.54	4.18	.23	4.58	4.34	.33	4.46	4.34	.50
	SD	.69	.90		.64	.64		.79	.79		.75	.75	
Item 5	M	3.97	3.79	.41	4.24	3.55	.09	3.80	3.54	.28	3.40	3.59	.35
	SD	.93	1.05		.85	.85		.79	.79		.92	.92	
Item 6	M	3.72	3.13	.01*	3.52	3.25	.55	3.17	3.67	.11	3.44	3.66	.33
	SD	1.11	1.06		.99	.99		1.00	1.00		1.00	1.00	
Item 7	M	3.59	3.28	.13	4.04	3.03	.01*	3.35	3.42	.82	3.52	3.32	.34
	SD	.84	1.00		.74	.74		1.06	1.06		.95	.95	
Item 8	M	4.72	4.18	.003*	4.70	3.74	.01*	4.46	4.16	.16	4.62	4.05	.001*
	SD	.52	.92		.71	.71		.71	.71		.66	.66	
Item 9	M	4.06	3.59	.01*	4.45	3.34	.002*	4.10	3.59	.05*	3.91	3.58	.07
	SD	.80	.78		.71	.71		.83	.83		.81	.81	
Item 10	M	4.56	4.49	.64	4.23	4.47	.51	4.67	4.38	.20	4.66	4.37	.08
	SD	.62	.72		.78	.78		.74	.74		.73	.73	
Skills	M	18.59	16.64	.001*	20.31	15.70	.001*	18.04	16.94	.12	18.13	16.87	.01*
	SD	2.18	2.44		2.14	2.14		2.31	2.31		2.24	2.24	
Attitudes	M	21.88	21.10	.12	22.27	20.45	.05*	22.14	20.72	.04*	21.79	20.67	.02*
	SD	1.84	2.48		1.93	1.93		2.28	2.28		2.17	2.17	
Total	M	40.47	37.74	.001*	42.58	36.15	.001*	40.18	37.66	.03*	39.92	37.54	.003*
	SD	3.44	4.00		3.60	3.60		3.64	3.64		3.44	3.44	
Watson-Glaser	M	9.14	8.55	.34	10.53	10.51	.98	10.55	11.09	.45	9.72	10.26	.36
Inference	SD	2.54	2.54		1.99	1.99		2.35	2.35		2.60	2.60	
Assumption	M	10.84	10.92	.92	9.33	11.41	.10	10.15	11.30	.26	10.49	11.19	.32
	SD	2.82	2.82		2.72	2.72		3.36	3.36		3.12	3.12	
Deduction	M	16.52	16.20	.65	13.64	17.22	.02*	17.91	17.44	.61	17.04	16.78	.71
	SD	2.95	2.95		3.06	3.06		3.00	3.00		3.08	3.08	
Interpretation	M	15.24	15.57	.58	14.42	16.69	.20	17.28	17.83	.52	16.29	17.21	.16
	SD	2.51	2.51		3.89	3.89		2.78	2.78		2.93	2.93	
Argument	M	9.50	9.58	.89	8.41	8.75	.74	8.64	9.65	.06	9.43	9.54	.81
	SD	2.29	2.29		2.27	2.27		1.70	1.70		1.96	1.96	

Table 3 continued

		70-71			70-71-72			71-72			70-72		
		P	NP	α	P	NP	α	P	NP	α	P	NP	α
Total	M	61.24	60.99	.88	56.32	64.58	.04	64.52	67.26	.20	62.86	65.09	.17
	SD	6.78	6.78		8.50	8.50		7.00	7.00		7.28	7.28	
Percentile	M	57.13	57.67	.91	31.39	48.87	.10	51.63	58.36	.22	56.78	57.47	.86
	SD	19.43	19.43		23.00	23.00		17.89	17.89		17.70	17.70	
Grade Point	M	2.83	3.09	.06	2.84	3.19	.08	.....					
1 - 70	SD	.54	.54		.38	.38		.....					
	M	2.98	2.98	.99	2.81	3.13	.12	.....					
2 - 70	SD	.49	.49		.40	.40		.....					
	M	3.13	3.08	.72	2.96	3.11	.56	.....					
3 - 71	SD	.48	.48		.49	.49		.....					
	M	3.00	3.09	.51	3.01	3.22	.41	.....					
4 - 71	SD	.53	.53		.50	.50		.....					
	M	2.98	3.02	.80	2.87	3.24	.13	.....					
5 - 71	SD	.58	.58		.46	.46		.....					
	M	2.96	2.97	.92	2.92	3.13	.32	.....					
6 - 71	SD	.59	.59		.41	.41		.....					
	M	3.03	3.08	.69	2.80	3.15	.33	.....					
Final - 71	SD	.49	.49		.53	.53		.....					
	M	.....			3.02	3.27	.32	2.63	2.87	.40	.....		
1 - 71	SD	.....			.48	.48		.72	.72		.....		
	M	.....			3.00	3.27	.31	2.70	2.89	.48	.....		
2 - 71	SD	.....			.52	.52		.68	.68		.....		
	M	.....			3.11	3.16	.86	2.72	2.80	.74	.....		
3 - 72	SD	.....			.53	.53		.70	.70		.....		
	M	.....			3.03	3.35	.21	2.82	2.85	.90	.....		
4 - 72	SD	.....			.49	.49		.68	.68		.....		
	M	.....			2.86	3.31	.14	2.69	2.78	.75	.....		
5 - 72	SD	.....			.58	.58		.72	.72		.....		
	M	.....			2.78	3.30	.08	2.54	2.87	.14	.....		
6 - 72	SD	.....			.63	.63		.74	.74		.....		
	M	.....			2.94	3.22	.32	2.64	2.84	.32	.....		
Final - 72	SD	.....			.60	.60		.88	.67		.....		

*Indicates significant difference

Table 4
Pre-Post Gain Analysis
Statistics for Participants

Variable		70-71			70-71-72			71-72			70-72		
		Pre	Post	✓	Pre	Post	✓	Pre	Post	✓	Pre	Post	✓
Advisor Evaluation	M	3.61	2.93	.02*	3.64	3.36	.34	2.91	3.17	.75	2.96	3.16	.60
Item 1	SD	.91	1.21		.50	.81		1.27	1.37		1.23	1.43	
	M	3.83	3.32	.12	3.73	3.91	.66	3.09	3.35	.94	3.21	3.25	.60
Item 2	SD	1.15	1.46		1.10	1.14		1.19	1.37		1.22	1.07	
	M	3.70	2.84	.003*	3.45	3.55	1.00	3.27	3.17	.81	3.25	3.16	.80
Item 3	SD	1.00	1.39		.82	1.37		1.12	1.44		1.07	1.40	
	M	3.93	2.94	.002*	4.09	3.55	.40	3.32	3.17	.76	3.33	3.20	.72
Item 4	SD	.85	1.53		.70	1.44		1.17	1.44		1.23	1.44	
	M	4.32	3.32	.002*	4.36	3.91	.24	3.68	3.35	.52	3.62	3.36	.55
Item 5	SD	.79	1.66		.81	1.51		1.55	1.61		1.50	1.55	
	M	4.32	3.36	.001*	4.45	4.18	.50	3.77	3.35	.36	3.79	3.44	.39
Item 6	SD	.79	1.42		.69	.87		1.19	1.64		1.18	1.61	
	M	4.06	3.42	.02*	4.45	3.91	.08	3.41	3.56	.40	3.46	3.60	.71
Item 7	SD	.77	1.25		.69	.83		1.33	1.41		1.28	1.35	
	M	4.22	3.55	.02*	4.09	3.64	.19	3.82	3.91	.92	3.83	3.96	.68
Item 8	SD	.80	1.37		.83	1.12		1.05	1.12		1.01	1.10	
	M	4.25	3.26	.003*	4.36	3.73	.23	3.68	3.57	.79	3.75	3.60	.72
Item 9	SD	.81	1.67		.81	1.56		1.32	1.65		1.29	1.61	
	M	3.58	3.06	.12	3.55	3.64	.86	3.14	3.35	.82	3.12	3.40	.45
Item 10	SD	.95	1.64		.82	1.36		1.21	1.37		1.15	1.35	
	M	18.67	15.10	.01*	18.45	18.00	.76	15.73	16.22	.98	15.88	16.32	.79
Skills	SD	4.09	6.87		3.30	5.76		4.88	6.83		4.71	6.81	
	M	21.19	16.90	.002*	21.73	19.36	.10	18.36	17.74	.74	18.46	17.96	.78
Attitudes	SD	3.23	6.72		2.83	4.50		5.68	7.17		5.45	6.94	
	M	39.87	32.00	.004*	40.18	37.36	.36	34.09	33.96	.88	34.33	34.28	.99
Total	SD	6.97	13.43		5.64	10.23		10.15	13.80		9.77	13.51	

Table 4 continued

Variable		70-71 Post	70-71-72 Pre	70-71-72 Post		71-72 Mid	71-72 Post		70-72 Post
Student Evaluation	M	3.87	3.91	4.18	.19	3.82	4.39	.68	4.09
SE-2 Item 1	SD	.30	.70	.87		.96	.50		.73
	M	4.61	4.82	4.45	.22	3.82	4.61	.83	4.61
Item 2	SD	.71	.41	.82		.85	.65		.68
	M	3.16	2.91	2.64	.43	4.50	3.39	.11	3.26
Item 3	SD	.77	.83	1.21		.67	.99		.87
	M	3.93	4.09	3.27	.08	3.50	3.97	.47	3.91
Item 4	SD	1.09	1.30	1.35		.50	.97		1.03
	M	3.25	4.00	3.27	.14	3.73	2.70	.75	3.02
Item 5	SD	1.54	1.00	1.27		.83	1.46		1.52
	M	3.29	3.72	3.09	.26	3.73	3.61	.97	3.43
Item 6	SD	1.44	.79	1.30		.94	1.16		1.33
	M	2.80	2.64	3.00	.22	3.68	3.00	.42	2.89
Item 7	SD	1.51	1.36	1.55		.99	1.38		1.45
	M	2.74	3.09	2.91	.66	4.55	3.83	.32	2.78
Item 8	SD	.99	1.04	1.45		.67	.94		.96
	M	3.77	3.55	3.36	.72	3.95	3.65	.56	3.72
Item 9	SD	1.17	1.13	1.63		.84	.93		1.07
	M	3.74	4.09	3.45	.42	4.82	3.04	.14	3.44
Item 10	SD	1.52	1.45	1.44		.50	1.55		1.56

*Indicates significant difference

The results reveal a significant difference in the ratings given by the advisors in respect to the participants' skills and attitudes toward individualized study. All but two of the items show significant differences from pre- to post-ratings at the .05 significance level. The ratings given prior to the beginning of the program were higher for all items than were the post-ratings.

These results can be interpreted in several ways. The original ratings given by the advisors were very high so a general decrease would be expected due to regression. As mentioned before, the advisor expected a great deal from the students and perhaps the lower ratings at the end reflect their disappointment. It is also possible that the program did not improve the students' attitudes and skills and these ratings may then be reflecting these outcomes.

The variables which did not show a significant decrease at the .05 significance level were an assessment of the student's basic concepts of his study and the degree to which the student had developed in knowledge of sources of information. Research dealing with attitudes in the public school generally show less favorable ratings and less enthusiasm at the end of the year as opposed to the beginning. A periodic assessment of these attitudes was planned for the second year to determine if this phenomenon was operating in this situation.

The students were asked to respond to the ten items on the Student Evaluation (SE-2) to indicate what they thought were the valuable activities and outcomes of their experiences in the Individualized Study program. The results of their responses are given in Table 4.

The students expressed a positive attitude toward the program. Their highest ranking was for Item 2 which was their estimate of how well they understood their project material. Overall the students felt the program was interesting and that they acquired an understanding of their project material. There was a strong indication that the use of outside speakers was valuable and perhaps a few more would be helpful. The students felt that the number of books and materials available was adequate for their purposes. Generally the students felt a need for more frequent and longer group discussions. The discussion activities that they did have they considered to be valuable. Generally the students felt they had sufficient time during school hours available for their individual studies work.

The participants rated the project on the PHSE-1 favorably. They indicated that the program was of much assistance to them in general (3.97). It specifically made them aware of the importance of education, helped them to understand concepts they have met in the work or education and helped them to develop a skill for obtaining resources for the solution of problems they have encountered. The participants did not feel the program was of much help in making them aware of their responsibility to society. All but one of the students said that they would recommend the program for other Coshocton High School students.

Table 5
Post High School Evaluation
1970-71

Variable		Mean	1[a]	2	3	4	5	0
Item 1	Independent	3.32	2[b]	3	14	7	5	2
2	Resource Use	3.43	4	3	7	8	8	3
3	Respect Others	3.21	4	4	7	10	4	4
4	Problem Solving	3.38	2	5	10	9	6	1
5	Concept Development	3.54	2	2	9	9	6	5
6	Communication	3.39	2	5	8	14	4	0
7	Budget Time	3.16	2	7	11	6	5	2
8	Education Value	3.76	1	3	7	9	9	3
9	Responsibility to Society	2.65	7	5	7	4	3	6
10	General Value of Program	3.97	2	1	6	10	13	1

[a]1 = No help

2 = Little help

3 = Some help

4 - Much help

5 = Very much help

0 = No opinion

[b]Frequency for each response

1970-71-72

The analyses of the post-test data for those involved in the project for two years revealed significant differences at the .05 level on the SE-1 (Items 1, 2, 7, 8 and 9), SE-1 Skills Subscale, SE-1 Attitude Subscale and SE-1 Total. In general the students in the project felt less dependent on their teacher, more proficient at library usage, better able to manage their time, appreciative of the work of experts in their area of study and aware of ideas and concepts beyond the scope of the regular classroom course.

In addition to these differences, the Deductive Subscale in the Watson-Glaser score showed the non-participants to do significantly better than the participants over the two-year period. The analyses of the grade point averages for each grading period over the two year period showed no differences or recognizable trends. These results can be found in Table 3.

The analysis of the gain scores for the advisors' ratings of the participants' independent study skills and attitudes showed no significant differences between the pre- and post-ratings for those participating for two full years. Due to the high initial ratings at the beginning of the first year, this indicates that the advisors may have changed their expectations or that after two years the participants lived up to what the advisors expected of them.

The students' evaluation of the program (SE-2) was generally higher for this group than it was for the 1970-71 group. This was to be expected since the 1970-71-72 group are those who chose to remain in the program for a second year. There was an indication that more outside speakers would have been desirable as far as this group was concerned.

The SE-2 post-test for this group in 1970-71 was compared to their post-test for 1971-72 and no significant differences were found. The nearest was a decrease in their ratings on the value of outside speakers ($\alpha = .08$). They seemed to feel that outside speakers should be used, but not without regard for relevance and quality.

1971-72

During the second year of the program, mid-year as well as post-test, data were collected and analyzed for differences between the participants and non-participants. On the mid-year scores significant differences were found at the .05 level for SE-1 Item 8 and SE-1 Total.

This revealed that the participants felt a higher level of appreciation for experts in their field than did the non-participants. In general, the participants had a higher opinion of their own skills and attitudes toward independent study than the non-participants had of theirs. No differences in CTE-1, Watson-Glaser, and grade point averages were found. These results are in Table 6.

The AE-1 ratings were analyzed for pre-mid-post differences and none were found. The alpha level for these comparisons are given in Table 4. Since no differences (not even close) were found, the mid-ratings means are not reported

The SE-2 mid-ratings were compared to the SE-2 post- for 71-72 and again no significant differences were found. There was some indication that the ratings for the number of speakers had changed from "not enough" (4.50) to "about right" (3.39). This difference had an alpha of 0.11. The other near significant (0.14) change was in regard to the time available during school hours. The mid-rating was 4.82 (less than sufficient). This would seem to indicate as the year progressed the students felt need for more time to work on their projects. After the students got involved they saw the need for more time.

The analyses of the post-test scores for the second year group produced significant differences at the .05 level on the CTE-1 (Items 2 and 10) and CTE-1 Attitudes. In all of these instances, the non-participants were rated higher than the participants. These items relate to social awareness of the students and the role of the students in class discussions. The analyses of the SE-1 revealed differences on SE-1 (Items 1 and 9). The participants felt more independent of teacher guidance and indicated a higher awareness of the importance of self-education than did the non-participants. The participants rated themselves higher on their skills and attitudes toward independent study than did the non-participants.

There were no significant differences on the Watson-Glaser scores. These results can be found in Table 3.

The advisors' pre-assessment of the students' individualized study skills and attitudes were consistently lower for the 1971-72 participants than for the 1970-71 group. This may have been due to the nature of the students, but it is more likely due to more reasonable expectations on the part of the advisors. There were no significant changes in the advisor ratings from the beginning to the end of the year. The advisors did feel that the students should have taken more responsibility for their project. They also seemed to feel that the students realized the need for self-education. There may be some indication that the students' skills were improved but that their attitudes relevant to Individualized Study may have become less desirable. This measure might be confounded by attitude changes of the advisors throughout the year.

The results of the analysis of the SE-2 ratings were discussed previously in the mid-rating analysis section.

1970-72

The analyses of the post-test scores for all participants involved at any time during the two-year program revealed the following results. There were no significant differences on the CTE-1 (Items 1, 3 and 8), CTE-1 Skills, CTE-1 Attitudes and CTE-1 Total. This was due

primarily to the canceling effect of the higher ratings for participants for the 1970-71 group and lower ratings for the 1971-72 group.

The SE-1 ratings were significantly higher for the participants than the non-participants. The participants felt less dependence on the teachers, more respect for experts and the rights and opinions of others. There were no differences on the Watson-Glaser scores or the grade point averages between the two groups. These results can be found in Table 3.

The changes in the Advisor Evaluation for all participants were based on the first advisor ratings that were collected. For some this was at the beginning of the 1970-71 year, for others at the beginning of the 1971-72 year and for some at times within the year, depending on when they entered the program. The post-advisor ratings used in the analysis were those last collected. Due to the fact that over 60% of the participants' pre-advisor ratings were those obtained at the beginning of the 197071 year, the effects which the over-expectation at that time created had a major influence. The advisor ratings show a decrease on all items but not as pronounced as for the 1970-71 data. These results can not be used to reflect the changes in the students, but rather as evidence of change of the attitudes and expectations of the advisors.

The student evaluation of the program (SE-2) was given as a post measure for those students in the program for the first year and/or a mid and post measure for those students in the program the second year. The last time a student rated the program is considered to be the post-test measure. This is what is reported in Table 4. These ratings were generally high. The students felt they understood their project material quite well and found the program interesting. They indicated a need for more group discussion time and a need for more books. The student ratings provide evidence of a successful program.

Table 6
Mid-test Analysis Statistics
1971-72

Variables Adj

	M SD	Participants	Non-Participants	∝
	M	3.85	4.00	
CTE-1 Item 1	SD	.56	.56	.47
	M	3.67	3.93	
2	SD	.37	.37	.07
	M	3.63	3.78	
3	SD	.69	.69	.57
	M	3.87	4.09	
4	SD	.45	.45	.21
	M	3.47	3.68	
5	SD	.43	.43	.21
	M	3.52	3.74	
6	SD	.44	.44	.20
	M	3.75	3.64	
7	SD	.67	.67	.07
	M	3.50	3.57	
8	SD	.46	.46	.67
	M	3.75	3.84	
9	SD	.50	.50	.63
	M	3.51	3.66	
10	SD	.57	.57	.49
	M	21.63	22.26	
Skills	SD	2.79	2.79	.56
	M	14.90	15.68	
Attitude	SD	1.56	1.56	.20
	M	36.54	37.94	
Total	SD	4.17	4.17	.38
	M	3.36	2.99	
SE-1 Item 1	SD	.82	.82	.24
	M	3.74	3.24	
2	SD	1.05	1.05	.21
	M	4.70	4.29	
3	SD	.67	.67	.11
	M	4.63	4.62	
4	SD	.62	.62	.95
	M	3.71	3.38	
5	SD	.81	.81	.28
	M	3.68	3.33	
6	SD	1.12	1.12	.42
	M	3.39	3.21	
7	SD	1.19	1.19	.09
	M	4.65	3.87	
8	SD	.86	.86	.02*
	M	3.91	3.77	
9	SD	.62	.62	.56
	M	4.57	4.64	
10	SD	.44	.44	.06
	M	18.08	16.54	
Skills	SD	2.41	2.41	.10
	M	22.26	20.79	
Attitudes	SD	1.98	1.98	.06
	M	40.34	37.33	
Total	SD	2.94	2.94	.01*

Objectives vs. Outcomes

This section of the report will consider the relationship of the results of the data analysis to objectives of the program. Each objective will be considered separately and the relevant data presented as evidence for the success or failure of the program to attain each objective.

Objectives 1 - 5 are related to an increase of the participants' ability in independent study. Objectives 6 - 13 are related to increase in the participants' critical thinking ability. Objectives 14 - 15 are the objectives related to the increase in the participants' conceptual understanding ability. The objectives will be considered in order from 1 - 15.

Independent Study Ability

Objective I: The student improves in his ability to state a problem succinctly.

AE-1, Item 1: The student has critically outlined his study topic.
Very poorly = 1 ... to ... 5 = Exceptionally well

SE-1, Item 1: Are you dependent on teacher guidance?
Totally = 1 ... to ... 5 = Very little

CTE-1, Item 1: Potential for growth in the ability to think creatively?
Very little = 1 ... to ... 5 = Exceptional

The results of the data analysis for each objective has been summarized by objective in Table 7 - 10. These tables give the names of the variables which have relevance in the assessment of the attainment of the objective being considered. The table indicates evidence supporting the attainment of the objective with a plus (+) sign and the alpha level of significance. It is not a statistically significant bit of evidence it has been labeled not significant (NS). This has been done for each of the groupings used throughout this analysis. In some instances evidence is recorded for which no statistical tests were used. There will be only a + or a - sign.

Table 7
Summary of Data for Objective 1

Variable	70-71	70-71-72	71-72	70-72
AE-1, Item 1	[a]-(.02)[b]	-(NS)	+(NS)	-(NS)
SE-1, Item 1	+(.10)	+(.04)	[c]+(NS), +(.01)[d]	+(.001)
CTE-1, Item 1	-(NS)	-(NS)	-(NS), -(NS)	-(NS)

[a]The + sign indicates supporting evidence and attainment of the objectives, a - sign, non-supporting evidence.
[b]This number represents alpha level of significance.
[c]Mid-test score for 71-72 participants
[d]Final test score for 71-72 participants

The advisors, during the first year, felt the students had not improved in the ability to outline the problem to be studied. This was not the case during the second year. The students overwhelmingly felt that they were capable of working more independently of their teachers, but apparently the classroom teachers did not detect this in their classes. It appears the participants became much more confident in their own abilities for individual pursuit of knowledge and that they felt they had successfully attained this objective.

Objective 2: The student improves in his ability to research a problem by such means as the library, resource personnel, and experimentation.

The items related to this objective are:

AE-1, Item 10: Developed knowledge of information sources.
Very poorly = 1 ... to ... 5 = Highly knowledgeable
SE-1, Item 2: Library usage
Limited = 1 ... to ... 5 = Highly proficient
CTE-1, Item 8: Student displays knowledge beyond content available in subject area.
Very little=1 ... to ... 5 = Exceptional
PHSE-1, Item 2: Ability to seek out useful materials
No help = 1 ... to ... 5 = Very helpful

There is no clear indication as to how the advisors felt the students changed in their abilities to use research resources. The classroom teachers noted a significantly higher ability for the participants to display knowledge beyond the bounds of the subject area content of the classroom during the first year. This was not the case for the subject of eleven who continued in the program for the second year. These eleven students felt a very definite improvement in their use of the library as shown by the 0.001 alpha level in Table 8. The participants identified the program as helpful in their latter use of outside reference sources on the PHSE-1.

The evidence obtained from the students supports the success of the program in attainment of this goal. Overall, students who participated in the program and their parents were highly pleased with the opportunity provided to increase ability to do independent study. Evidence for this conclusion may be found in the appendix and in the professional judgments of the project director and consultants.

Table 8
Summary of Data for Objective 2

Variable	70-71	70-71-72	71-72	70-72
AE-1, Item 10	[a]+(NS)	+(NS)	+(NS)	+(NS)
SE-1, Item 2	+(NS)	+(.001)	+(NS), +(NS)	+(NS)
CTE-1, Item 8	+(.01)[b]	-(NS)	-(NS), -(NS)	+(.09)
PHSE-1, Item 2	+(NS)			

[a]The + sign indicates supporting evidence and attainment of objective; a - sign, non-supporting evidence.
[b]This number represents alpha level of significance.

Objective 3: The student improves in his ability to outline his procedure in detail with deadlines for completion.

The items related to this objective are:

SE-1, Item 7: Budgets time
Very little = 1 ... to ... 5 = Very much
SE-2, Item 10: Time available
Insufficient = 1 ... to ... 5 = Sufficient
AE-1, Item 1: Critical outline of study topic
Very poorly = 1 ... to ... 5 = Exceptionally well
AE-1, Item 4: Uses time wisely
Very poorly = 1 ... to ... 5 = Exceptionally well
CTE-1, Item 3: Time for course work
No = 1 ... to ... 5 = Yes
CTE-1, Item 7: Budgets time
Poorly = 1 ... to ... 5 = Very well
PHSE-1, Item 7: Budgets time
Program no help = 1 ... to ... 5 = Very helpful

The participants' self-evaluation of their ability to budget their time were significantly higher than the non-participants' self-evaluation for the two-year participants. This judgment was not shared by the classroom teachers or the advisors, and if anything, they judged the participants as less able to budget their time than the non-participants. The participants considered the school time available to be sufficient at the middle of the year, but by the end of the year, they

expressed a need for more time. This could have been due to a need for more time after the student became interested in a project or it may have been a result of procrastination. The evidence for attainment of their objective displayed in Table 9 is not clear.

Table 9
Summary of Data for Objective 3

Variable	70-71	70-71-72	71-72	70-72
SE-1, Item 7	+(NS)	[a]+(.01)[b]	+(NS),-(NS)	+(NS)
SE-2, Item 10	+	+(NS)	+(NS)	+(NS)
AE-1, Item 1	-(.02)	-(NS)	+(NS)	-(NS)
AE-1, Item 4	-(.002)	-(NS)	-(NS)	-(NS)
CTE-1, Item 3	-(NS)	-(NS)	+(NS)	-(NS)
CTE-1, Item 7	-(NS)	-(NS)	+(NS),-(NS)	-(NS)
PHSE-1, Item 7	+			

[a]The + sign indicates supporting evidence and attainment of objective; a - sign, non-supporting evidence.
[b]This number represents alpha level of significance.

Objective 4: The student improves in his ability to follow through and to revise his procedure as needed.

The items relating to this objective are:

AE-1, Item 5: Interest in study
Lacking = 1 ... to ... 5 = Highly interested
AE-1, Item 9: Attitude toward completing study
Apathetic = 1 ... to ... 5 = Highly concerned
CTE-1, Item 5: Ability to think creatively
Very little = 1 ... to ... 5 = Exceptional

The first year participants did not live up to the expectation of their advisors in their ability to follow through on their individualized study during the first year. The classroom teachers, on the other hand, considered the participants to have a greater ability than the non-participants for creative thinking. These effects all tended to be diluted after the first year. Perhaps the advisor's expectations were lowered by experience and the "halo effect" of the program was reduced as far as the classroom teachers were concerned. The evidence in Table 10 does not support the attainment of this objective.

Table 10
Summary of Data for Objective 4

Variable	70-71	70-71-72	71-72	70-72
AE-1, Item 5	[a]-(.002)[b]	-(NS)	-(NS)	-(NS)
AE-1, Item 9	-(.003)	-(NS)	-(NS)	-(NS)
CTE-1, Item 5	+(.02)	-(NS)	-(NS),-(NS)	+(NS)

[a]The + sign indicates supporting evidence and attainment of the objective; a - sign, non-supporting evidence.
[b]This number represents alpha level of significance.

Objective 5: The student improves in his ability to report accurately and logically the results of his study.

The items related to this objective are:

AE-1, Item 2: Understanding of basic concepts of study
AE-1, Item 3: Ability to orally explain procedure
Very poor = 1 ... to ... 5 = Exceptional
SE-1, Item 6: Express thoughts to others
Very little = 1 ... to ... 5 = Very much
CTE-1, Item 10: Role in class discussion
Passive = 1 ... to ... 5 = Active
PHSE-1, Item 6: Express ideas
No help = 1 ... to ... 5 = Very helpful

The participants did not seem to be as adept at explaining their procedures as the advisors expected during the first year. The classroom teachers reported the participants as taking much more active role in class discussions. It is interesting to note a reversal of these conditions during the second year. It would appear that the evidence summarized in Table 11 supports the attainment of the objective for the first year, but not for the second year of the program.

Table 11
Summary of Data for Objective 5

Variable	70-71	70-71-72	71-72	70-72
AE-1, Item 2	[a]-(NS)	+(NS)	+(NS)	-(NS)
AE-1, Item 3	-(.002)[b]	+(NS)	-(NS)	-(NS)
SE-1, Item 6	+(.01)	+(NS)	+(NS),-(NS)	-(NS)
CTE-1, Item 10	+(.001)	-(NS)	+(NS),-(.02)	+(NS)
PHSE-1, Item 6	+			

[a]The + sign indicates supporting evidence for attainment of objective, and a - sign, non-supporting evidence.
[b]This number represents alpha level of significance.

Critical Thinking Ability

Objective 6: The student improves his skill to make comparisons of his selected readings, authors, and previous research results.

The responses related to this objective include:

SE-1, Item 4: Aware of need for careful analysis
Unaware = 1 ... to ... 5 = Highly aware
SE-1, Item 8: Appreciate work of experts
Unappreciative = 1 ... to ... 5 = Highly appreciative
Watson-Glaser subscales:
Assumptions
Arguments

The participants rated themselves significantly higher in their appreciation and respect for the work of experts in the field. They did not do better on the subscales of the Watson-Glaser related to these objectives. The second year participants were significantly lower on the arguments subscale of the Watson-Glaser than were the non-participants. The evidence summarized in Table 12 does not support the attainment of this objective.

Table 12
Summary of Data for Objective 6

Variable	70-71	70-71-72	71-72	70-72
SE-1, Item 4	[a]-(NS)	+(NS)	+(NS),+(NS)	+(NS)
SE-1, Item 8	+(.003)[b]	+(.01)	+(.02),+(NS)	+(.001)
W-G Assump.	-(NS)	-(.10)	-(NS)	-(NS)
W-G Argument	-(NS)	-(NS)	-(.06)	-(NS)

[a]The + sign indicates supporting evidence for attainment of objective, and a - sign, non-supporting evidence.
[b]This number represents alpha level of significance.

Objective 7: The student improves his skill to identify common elements among data pertinent to his study.

The responses relevant to this objective include:

SE-1, Item 4: Aware of need for careful analysis
Unaware = 1 ... to ... 5 = Highly aware
PHSE-1, Item 4: Problem solving methods
No help = 1 ... to ... 5 = Very helpful
Watson-Glaser: Inferences

The students in the program were not significantly more aware of the need for careful analysis than the non-participants, but there may have been a trend in that direction. The evidence in Table 13 does not support the attainment of the objective.

Table 13
Summary of Data for Objective 7

Variable	70-71	70-71-72	71-72	70-72
SE-1, Item 4	[a]-(NS)	+(NS)	+(NS),+(NS)	+(NS)
W-G Inference	+(NS)	+(NS)	-(NS)	-(NS)
PHSE-1, Item 4	+			

[a]The + sign indicates supporting evidence for attainment of objective, and a - sign, non-supporting evidence.

Objective 8: The student improves his skill to make generalizations from data obtained from his study.

The items relevant to this objective are:

CTE-1, Item 8: Knowledge beyond course content
Very little = 1 ... to ... 5 = Exceptional
PHSE-1, Item 5: Understand concepts of new problems
No help = 1 ... to ... 5 = Very helpful
Watson Glaser subscales:
Interpretation
Arguments

The classroom teachers in the first year and overall indicated that the participants had greater knowledge beyond the course content than did the non-participants. The second year group did not do as well as those not in the program on the Argument subscale of the Watson-Glaser. It appears that the first year participants gained some specialized knowledge, but did not develop the critical thinking skills related to generalization of knowledge along with it. In any case, the evidence summarized in Table 14 does not support the attainment of the objective.

Table 14
Summary of Data for Objective 8

Variable	70-71	70-71-72	71-72	70-72
CTE-1, Item 8	[a]+(.01)[b]	-(NS)	-(NS)	+(.09)
W-G Interpret.	-(NS)	-(NS)	-(NS)	-(NS)
W-G Argument	-(NS)	-(NS)	-(.06)	-(NS)
PHSE-1, Item 5	+			

[a]The + sign indicates supporting evidence for attainment of objective, and a - sign, non-supporting evidence.
[b]This number represents alpha level of significance.

Objective 9: The student improves his skill to express opinions based on accurate information.

The responses relevant to this objective are:

SE-1, Item 6: Express thoughts to others
Very little = 1 ... to ... 5 = Very much
CTE-1, Item 5: Ability to think creatively
Very little = 1 ... to ... 5 = Exceptional
CTE-1, Item 6: Understanding major concepts
Very little = 1 ... to ... 5 = Exceptional

Watson-Glaser subscale: Argument

The participants and classroom teachers during the first year rated the participants higher than the non-participants on items related to the ability to present logical arguments. This supporting evidence did not result from the second year data. The teachers rated the participants lower in their understanding of major concepts and the participants scored lower on the Argument subscale of the Watson-Glaser. The evidence summarized in Table 15 gives mild support for attainment of the objective during the first year, but no evidence of attainment during the second year.

Table 15
Summary of Data for Objective 9

Variable	70-71	70-71-72	71-72	70-72
SE-1, Item 6	[a]+(.01)[b]	+(NS)	+(NS),-(NS)	-(NS)
CTE-1, Item 5	+(.02)	-(NS)	-(NS),-(NS)	+(NS)
CTE-1, Item 6	+(.06)	-(NS)	-(NS),-(.09)	+(NS)
W-G Argument	-(NS)	-(NS)	-(.06)	-(NS)

[a]The + sign indicates supporting evidence for attainment of objective, and a - sign, non-supporting evidence.
[b]This number represents alpha leval of significance.

Objective 10: The student demonstrates significant improvement on a selected standardized critical thinking test.

The instrument used for this objective is the Watson-Glaser Critical Thinking Appraisal.

The Watson-Glaser Total and subtest scores summarized in Table 16 do not support the attainment of this objective. The only significant or near significant findings favor the non-participants. The nature of the projects chosen by many of the participants may not have been demanding of critical thinking skills. Nor did some of the advisors give as much attention to this objective as had been originally intended.

Table 16
Summary of Data for Objective 10

Variable	70-71	70-71-72	71-72	70-72
Inferences	[a]+(NS)	+(NS)	-(NS)	-(NS)
Assumption	-(NS)	-(.10)[b]	-(NS)	-(NS)
Deduction	+(NS)	-(.02)	+(NS)	+(NS)
Interpretation	-(NS)	-(NS)	-(NS)	-(NS)
Argument	-(NS)	-(NS)	-(.06)	-(NS)
Total	+(NS)	-(.04)	-(NS)	-(NS)
% ile	-(NS)	-(.10)	-(NS)	-(NS)

[a]The + sign indicates supporting evidence for attainment of objective; a - sign, non-supporting evidence.
[b]This number represents alpha level of significance.

Conceptual Understanding Ability

Objective 11: The student improves his skill to identify additional data needed to better describe the concept of his study.

The data relevant to this objective are the responses to:

SE-1, Item 5: Awareness of interrelationships between subject areas
None = 1 ... to ... 5 = Great deal
SE-1, Item 9: Aware of ideas beyond regular classroom courses
Unaware = 1 ... to ... 5 = Highly aware
CTE-1, Item 5: Ability to think creatively
Very little = 1 ... to ... 5 = Exceptional
CTE-1, Item 6: Understands major concepts
Very little = 1 ... to ... 5 = Exceptional
CTE-1, Item 8: Aware of concepts beyond class content
Aware = 1 ... to ... 5 = Highly aware
PHSE-1, Item 5: Understanding concepts of new problems
No help = 1 ... to ... 5 = Very helpful

Watson-Glaser subscale: Assumptions

The students and the classroom teachers agreed that the participants were more aware of concepts beyond the class content than were the non-participants. There is some indication that the students in the program were more aware of the interrelationships between subject areas. The participants' ability to recognize valid assumptions appeared not to be as good as the non-participants. It may be that the

participants were aware of the need for more data as in Objective 11, but did not become more skillful in its use.

Table 17
Summary of Data for Objective 11

Variable	70-71	70-71-72	71-72	70-72
SE-1, Item 5	[a]+(NS)	+(.09)	+(NS),+(NS)	-(NS)
SE-1, Item 9	+(.01)[b]	+(.002)	+(NS),+(.05)	+(.07)
CTE-1, Item 5	+(.02)	-(NS)	-(NS),-(NS)	+(NS)
CTE-1, Item 6	+(.06)	-(NS)	-(NS),-(.09)	+(NS)
CTE-1, Item 8	+(.01)	-(NS)	-(NS),-(NS)	+(.09)
PHSE-1, Item 5	+			
W-G Assump.	-(NS)	-(.10)	-(.06)	-(NS)

[a]The + sign indicates supporting evidence for attainment of objective; a - sign, non-supporting evidence.
[b]This number represents alpha level of significance.

Objective 12: The student improves his skill to withhold judgment until he has necessary data that describes a concept of his study.

The responses related to this objective are:

SE-1, Item 4: Awareness of need for careful analysis in problem solving
Unaware = 1 ... to ... 5 = Highly aware
W-G subscales: Inferences
Assumptions
Deductions

The evidence summarized in Table 18 does not support the attainment of objective 12. The participants did not rate themselves any higher than non-participants rated themselves. The evidence from the Watson-Glaser subscales was a significant difference favoring the non-participants who had two years of the program.

Table 18
Summary of Data for Objective 12

Variable	70-71	70-71-72	71-72	70-72
SE-1, Item 4	[a]-(NS)	+(NS)	+(NS),+(NS)	+(NS)
W-G Inference	+(NS)	+(NS)	-(NS)	-(NS)
W-G Assump.	-(NS)	-(.10)	-(NS)	-(NS)
W-G Deduct.	+(NS)	-(.02)	+(NS)	+(NS)

[a]The + sign indicates supporting evidence for attainment of objective; a - sign, non-supporting evidence.

Objective 13: The student improves his ability to identify unwarranted interpretations of his data that would not describe a concept of his s ty.

The responses related to this objective are those on the Watson-Glaser subscales.

Watson-Glaser: Inference
Assumption
Deduction
Interpretation

Table 19 summarizes the evidence for attainment of objective 13. The only significant differences between the participants and non-participants favored the non-participants. The participants, after two years in the program, were less able to make deductions than were the non-participants. This evidence does not support the attainment of this objective.

Table 19
Summary of Data for Objective 13

Variable	70-71	70-71-72	71-72	70-72
Inference	[a]+(NS)	+(NS)	-(NS)	-(NS)
Assumption	-(NS)	-(.10)[b]	-(NS)	-(NS)
Deduction	+(NS)	-(.02)	+(NS)	+(NS)
Interpretation	-(NS)	-(NS)	-(NS)	-(NS)

[a]The + sign indicates supporting evidence for attainment of objective; a - sign, non-supporting evidence.
[b]This number represents alpha level of significance.

Objective 14: The student improves his ability to understand the concepts of classroom subjects.

The response relevant to this objective is:

CTE-1, Item 6: Ability to understand major concepts
Very little = 1 ... to ... 5 = Exceptional
Measured by Grade Point Average used as data in developing Table 20

Objective 15: The student demonstrates significant (5% level) improvement on a selected standardized conceptual understanding test by 5% per year.

The data available for assessing the achievement of the participants is in terms of the grade point average for each six-weeks period and for the cumulative grade point for the end of each year. These are listed under objective 14 and the summary given in Table 20. The evidence for the attainment of objectives 14 and 15 was negative. The only differences beyond the first grading period of the first year were negative although not at the 0.05 level. The abilities derived by the participants were apparently not those rewarded by teachers in grading.

Table 20
Summary of Data for Objectives
14 and 15

Variable	70-71	70-71-72	71-72	70-72
CTE-1, Item 6	[a]+(.06)[b]	-(NS)	-(.09)	+(NS)
GPA 1-70	-(.06)	-(.08)		
GPA 2-70	-(NS)[c]	-(NS)		
GPA 3-71	+(NS)	-(NS)		
GPA 4-71	-(NS)	-(NS)		
GPA 5-71	-(NS)	-(NS)		
GPA 6-71	-(NS)	-(NS)		
GPA Final-71	-(NS)	-(NS)		
GPA 1-71		-(NS)	-(NS)	
GPA 2-71		-(NS)	-(NS)	
GPA 3-72		-(NS)	-(NS)	
GPA 4-72		-(NS)	-(NS)	
GPA 5-72		-(NS)	-(NS)	
GPA 6-72		-(.08)	-(NS)	
GPA Final-72		-(NS)	-(NS)	

[a]The + sign indicates supporting evidence for attainment of objectives; a - sign, non-supporting evidence.
[b]This number represents alpha level of significance.
[c]Grade point average for the two groups was equal.

Evaluation Summary

The evaluation of the Individualized Study for the Academically Talented Students Project at Coshocton High School was conducted over a two-year period from August, 1970, to June, 1972. A total of 56 participants and 116 non-participants were included in the evaluation sample. The non-participants were matched with the participants in order to obtain a control group.

Biographical, educational and pre-test data were collected and the two groups analyzed for initial differences. Adjustments for these differences were made statistically by analysis of covariance.

The dependent variable measures were obtained from advisor, teacher and student rating scales. Additional dependent variable measures were obtained from the Watson-Glaser Appraisal of Critical Thinking and from the student grade point averages.

The evaluation produced the following results:

A. The students in the program rated themselves higher on the attainment of independent study skills and attitudes than did the control group.

B. The classroom teachers rated the participants higher than the non-participants on skills and attitudes relevant to independent study during the first year of the program.

C. The classroom teachers rated the participants higher than the non-participants on their participation in class discussion during the first year, but lower during the second.

D. The advisors expected much more from the students than the students produced during the first year.

E. The program did not improve the critical thinking skills of the participants.

F. The program did not improve the grade point averages of the participants.

G. The attitude and interest of the participants in the program was high.

The fifteen program objectives were considered separately and the evidence summarized. The evidence strongly supported the acquisition of the skills and attitudes necessary for independent study by the participants. The strongest evidence came from the student self-evaluation.

The attainment of the critical thinking objectives and conceptual understanding objectives were not supported by the data.

RECOMMENDATIONS

Two years of working with a program of Individualized Study for the Academically Talented in Coshocton High School leads to the following recommendations by the faculty advisors and the consultants:

1. The program should be continued with local funding.
2. Students should be screened more carefully to identify those with truly high interest in doing independent study.
3. Students should be required to submit, before admittance into the program, a rather detailed written plan concerning what they propose to do.
4. Only teachers who are quite competent in the area of study in which a student proposes to do independent study and who are eager to work with students in this type of program should be sponsors.
5. Efforts should be made to identify and use as sponsors lay persons who are qualified to serve in this capacity.
6. Faculty sponsors, particularly those new to the program, should be given more guidance in how to work with students in individualized study programs.
7. Measures of critical thinking other than the Watson-Glaser test should be secured and used in any future formal evaluations.
8. Advisors and students should meet regularly to assess progress and to plan ahead.
9. Seminar speakers should be recruited primarily from local organizations and industry.
10. Information learned through individualized study should be shared in regular class work throughout the school.

Conclusion

An independent study project of this kind depends a great deal on the faculty advisors and their attitudes and expectations. To help the student accomplish the higher order objectives such as critical thinking and problem solving abilities, the advisor should have special skills. Perhaps greater attention to the development of questioning skills for the advisor would have proven useful.

In addition to obtaining highly qualified advisors, the nature of the school's reward system for students needs to be examined. The skills and knowledge obtained in an individualized study program are generally not directly related to grading procedures. In fact, the student who feels he can get along without the teacher (and who may show his feeling) probably will not get the highest grades.

It is important for the youth of today to learn how to learn independently of the teachers and the schools. The nature of the problems which they will face in the future is very difficult to predict. This makes the skills of learning new concepts, problem solving, critical thinking, and the habit of independent study of prime importance as objectives for today's schools.

APPENDIX A

APPLICATION FOR INDEPENDENT STUDY

General Information

Since students in independent study are expected to acquire deeper understanding than students in a conventional class, admission to this program is by application, initiated by the student. There are two steps to entering this program. Interested students should complete the application form and write no more than one typewritten page setting forth the proposal for their study or project. The proposal should clearly show what the student plans to accomplish.

DATE _____

NAME _____ YEAR IN SCHOOL _____

AREA OF STUDY _____

PREVIOUS COURSES OR EXPERIENCES RELATING TO THIS AREA _____

_____

_____

_____

HOW WILL THE KNOWLEDGE YOU GAIN THROUGH THIS STUDY BE BENEFICIAL TO YOU LATER?

_____

_____

IN WHAT EXTRA-CURRICULAR ACTIVITIES DO YOU PARTICIPATE? _____

_____

HOW MUCH AVERAGE TIME DO YOU CURRENTLY DEVOTE TO CLASS ASSIGNMENTS PER NIGHT?

_____

WHAT AREAS OF EXTRA-CURRICULAR READING GIVE YOU MOST PLEASURE? _____

_____

DO YOU ENJOY INTERPRETING NEW MATERIAL FOR YOURSELF, AS OPPOSED TO CLASS LEARNING? _____

EXPLAIN _____

_____

_____

_____

PLEASE GIVE ANY OTHER INFORMATION PERTAINING TO YOUR BACKGROUND AND CAPACITY TO BENEFIT FROM INDEPENDENT STUDY WHICH MIGHT BE HELPFUL TO THE COMMITTEE ON APPROVAL _____

_____

_____

_____

_____

_____

ON THE BACK OF THIS APPLICATION WRITE A SHORT SUMMARY OF YOUR UNDERSTANDING OF THE PROGRAM. WOULD YOU BE WILLING TO EXTEND YOUR SCHOOL DAY IN ORDER TO PURSUE THIS STUDY IF THERE WERE NO OTHER WAY? _____

_____

_____

ATTACH TO THIS APPLICATION A COPY OF YOUR PROPOSAL AND YOUR PLANNED SCHEDULE FOR THE COMING YEAR.

PARENTS' APPROVAL:

I have read the completed questionnaire and hereby give approval for my student to participate in an Independent Study Program.

_____

(Signature of Parent or Guardian)

Student _____

Date _____

ADVISOR'S EVALUATION OF INDIVIDUALIZED STUDY

You are asked to complete the following check list to assist the staff in evaluating the program of Individualized Study. Please answer each question by use of a check mark on a sliding scale from the lowest to the highest.

1. To what degree has this student critically outlined his study topic?

Very Poorly _____ _____ _____ Exceptionally Well

2. To what degree does this student appear to have an understanding of the basic concepts of his study?

Very Poor _____ _____ _____ Exceptional

3. To what degree can this student orally explain his method of procedure?

Very Poorly _____ _____ _____ Exceptional

4. To what degree does it appear that this student uses his time wisely?

Very Poorly _____ _____ _____ Exceptional

5. To what degree does this student show interest in his study?

Lacking _____ _____ _____ Highly Interested

6. To what extent does this student accept personal responsibility for his study?

Refuses _____ _____ _____ Accepts Fully

7. To what degree does this student show his conviction that self-education is important?

Indifferent _____ _____ _____ Highly Concerned

8. To what degree does this student respect the opinions of others?

Very Inconsiderate _____ _____ _____ Highly Considerate

9. To what degree does this student show signs of wanting to complete his study?

Apathetic _____ _____ _____ Highly Concerned

10. To what degree has the student developed in knowledge of sources of information?

Very Poorly _____ _____ _____ Highly Knowledgable

Student _____

Subject _____

CLASSROOM TEACHER EVALUATION OF INDIVIDUALIZED STUDY PROGRAM

Dear Classroom Teacher:

You are asked to complete the following check list to assist the committee in evaluating the program of Individualized Study.

1. What is this student's attitude toward school?

   Negative _____ _____ _____ _____ Positive

2. Is this student aware of world social problems?

   Unaware _____ _____ _____ _____ Highly aware

3. Does this student use sufficient time for your course?

   No _____ _____ _____ _____ Yes

4. What is this student's attitude toward the rights and opinions of other individuals?

   Intolerant _____ _____ _____ _____ Very tolerant

5. Does this student exhibit potential in the ability to think creatively?

   Very little _____ _____ _____ _____ Exceptional

6. Does this student possess the ability to understand major concepts?

   Very little _____ _____ _____ _____ Exceptional

7. How do you feel that this student budgets his time?

   Poorly _____ _____ _____ _____ Very well

8. To what extent does this student display knowledge beyond the content available in your subject area?

   Very little _____ _____ _____ _____ Exceptional

9. Do you feel that this student is convinced that self-education is important?

   Unconvinced _____ _____ _____ _____ Convinced

10. What is this student's role in class discussion?

    Passive _____ _____ _____ _____ Active

Form CTE-1

Name _____
Optional

Date _____

STUDENT EVALUATION OF THE INDIVIDUALIZED STUDY PROGRAM

To the Student:

You are asked to complete the following check list to assist the staff in evaluating the program of Individualized Study. This check list in no way will be used to determine your progress in this program. Thank you.

On this check list you are asked to answer each question by use of a check mark on a sliding scale from the lowest to the highest.

1. To what degree are you dependent on teacher guidance in the Individualized Study program?

Totally _____ _____ _____ Very Little

2. To what degree are you proficient in library usage?

Limited _____ _____ _____ Highly Proficient

3. To what degree do you respect the rights and opinions of others?

Disrespectful _____ _____ _____ Highly Respectful

4. How important do you consider the need for careful analysis in problem solving?

Of No Importance _____ _____ _____ Highly Important

5. How closely related are the different subject areas?

None _____ _____ _____ A Great Deal

6. To what degree do you express your thoughts to others?

Very Little _____ _____ _____ Very Much

7. To what degree do you budget your time?

Very Little _____ _____ _____ Very Much

. To what degree do you appreciate the work of the experts in your project area?

Unappreciative _____ _____ _____ Highly Appreciative

9. To what degree are you aware of ideas beyond those normally presented in the regular classroom courses?

Unaware _____ _____ _____ Highly aware

10. How important do you consider self-education?

Unimportant _____ _____ _____ Very Important

Write any comments on the back.

Name _____ Optional

Date _____

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1. From the standpoint of interest I would say this program is

Dull _____ _____ _____ _____ Exciting

2. My understanding of my project material is

Inadequate _____ _____ _____ _____ Adequate

3. The number of outside speakers is

Too Many _____ _____ _____ _____ Not Enough

4. The value of outside speakers is

No Value _____ _____ _____ _____ Highly Valuable

5. The number of books available is

Few _____ _____ _____ _____ Many

6. The amount of project material available is

Very Little _____ _____ _____ _____ Abundant

7. The number of group discussions is

Inadequate _____ _____ _____ _____ Adequate

8. The length of group discussions is

Too Short _____ _____ _____ _____ Too Lengthy

9. The value of the group discussion is

No Value _____ _____ _____ _____ Highly Valuable

10. The time available during school hours for Individualized Study is

Insufficient _____ _____ _____ _____ Sufficient

Write any comments on the back

Name _____

Present occupation _____

Date _____

Year of Graduation _____

POST HIGH SCHOOL EVALUATION

Dear _____

Our records indicate that you took part in the Individualized Study Program while a student at Coshocton High School. In an attempt to assist the staff in the continuing evaluation of the Individualized Study Program, you are asked to complete the following questionnaire. Please complete and return in the self-addressed envelope.

Thank you.

You are asked to answer the following questions by the use of a number from one to six. Place an x in the box which corresponds to your choice.

1. Unable to determine
2. Has been of no help
3. Has been of little help
4. Has been of some help
5. Has been of much help
6. Has helped very much

1	2	3	4	5	6	
☐	☐	☐	☐	☐	☐	1.) To what degree has the Program made you less dependent on guidance by other individuals?
☐	☐	☐	☐	☐	☐	2.) To what degree has the Program enabled you to seek out materials and/or information necessary for your job or in furthering your education?
☐	☐	☐	☐	☐	☐	3.) To what degree do you fell the program helped you to respect the rights and opinions of other individuals?

4.) To what degree did the Program help you develop good methods of analysis in problem solving?

5.) To what degree did the Program enable you to understand the major concept of problems you meet in your job or in your formal education?

6.) To what degree has this Program helped you to express your ideas to others?

7.) To what degree did the Program help you learn to budget your time?

8.) To what degree did the Program make you aware of the importance of education?

9.) To what degree has the Program made you aware of your responsibility to society?

10.) To what degree did you benefit from taking part in this program?

Yes ____ No ____ 11.) Would you recommend this Program to other Coshocton High Students?